

# Frontal meningioma with psychiatric symptoms

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## ABSTRACT

Frontal meningioma is often asymptomatic and patient may present with psychiatric symptoms. We report a case of 45-year-old female patient with no premorbid medical illness presented with 6 months history of depressive symptoms and changes in personality. Her worsening cognitive impairment brought her to psychiatry clinic and led to further investigation with contrast-enhanced computed tomography (CECT) Brain. The result showed well defined markedly enhancing lesion in the frontal region measuring 5.5 cm X 5.2 cm X 4.4 cm with mass effect to the adjacent brain parenchyma and associated surrounding edema. Diagnosis of bifrontal tumour-olfactory Groove Meningioma was made. Patient underwent bifrontal craniotomy and tumour excision. The quality of life improved after surgical excision.

**Keywords:** Atypical psychiatric symptoms, cognitive impairment, frontal meningioma

## Introduction

Brain tumors, either primary or metastatic, generally cause the development of focal neurologic deficits, such as hemiparesis, sensory deficit, and aphasia. However, benign tumors, such as meningioma, that externally compress the frontal lobes may not produce any symptoms other than progressive changes in personality and intellect until they have enlarged significantly, leading to its renowned designation as a “silent tumor.”<sup>[1]</sup> Meningioma is the most common benign tumor, accounting for 13%–26% of intracranial tumors; most of them are slow growing, and many are found incidentally.<sup>[2]</sup> The clinical symptoms are usually dependent on the anatomic site involved.<sup>[3]</sup> We report a case with symptoms of depression and changes in personality, which, on further investigation, showed space-occupying lesions, which suggests frontal meningioma.

## Case Report

A 45-year-old female patient with no known previous medical and psychiatric history was referred to a psychiatric clinic for abnormal behavior. She initially had symptoms of depression, including social withdrawal, fatigue and hypersomnia, with loss of interest in her work and her family. She was brought to multiple traditional healers. No medical treatment was sought. After 6 months, her symptoms worsened, whereby she was noted to have developed childish behavior and was unable to take care of herself. She also had become forgetful with poor insight. There was no history of head trauma or any focal neurological deficit. There was no history of psychiatric illness in her family. She never smoked or consumed alcohol and was not on any illicit drugs.

On examination, she was found to be oriented to time, place, and person but had poor attention and concentration with poor judgments. Her Mini-Mental state examination score was 21/30. She weighed 70 kg. Her blood pressure was 125/70 mmHg, with a pulse rate of 80 beats/min. A fundoscopy examination showed bilateral papilloedema. Neurological examinations,

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including cranial nerve and other systemic examinations, were all unremarkable. Her blood test results, including hematological and biochemical parameters, were normal.

A contrast-enhanced computed tomography (CECT) of the patient's brain was performed, and the findings showed a well-defined markedly enhancing lesion in the frontal region that measured 5.5 cm × 5.2 cm × 4.4 cm compressing on the adjacent brain parenchyma with an associated marked surrounding edema. These features are in keeping with a bifrontal tumor – olfactory groove meningioma [Figures 1 and 2]. A bifrontal craniotomy and tumor excision were performed after the patient was referred to the Department of Neurosurgery. Two months postsurgery, the patient was referred to neuropsychology for a neuropsychological assessment. Her symptoms resolved after the surgical treatment, and her quality of life also significantly improved.

## Discussion

Meningioma is a slow-growing tumor of the meninges. Ninety percent of meningiomas are benign and mostly occur in the brain. Middle-aged women are more than twice as likely as men to develop a meningioma. Most meningiomas occur between the ages of 30 and 70 years old and rarely occur in children.<sup>[3]</sup>

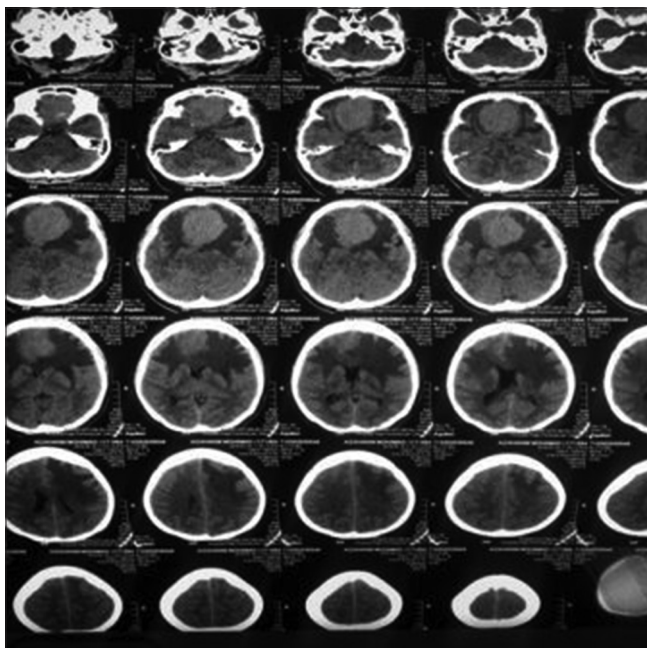
A meningioma usually causes neurological symptoms, such as headaches, seizures, weakness in upper and lower limbs, and sensory and vision changes. The growth of the lesion and the site involved usually determine the symptoms and signs of the patients.<sup>[4]</sup> Patients usually present with vague somatic or undifferentiated psychiatric symptoms that lead to receiving

conservative treatment by the physician. Furthermore, some patients present initially with only psychiatry illnesses before the onset of neurological symptoms.<sup>[3,4]</sup> They will seek treatment from either primary care or tertiary centers, and the majority of them will be prescribed psychiatry medications if their symptoms match any relevant International Statistical Classification of Diseases (ICD-10) criteria. However, usually, a patient will keep the symptoms to themselves and attend multiple traditional healers with the assumption that the symptoms are supernaturally related.<sup>[5]</sup> Seeking traditional healers is common in the community, especially with the first episode of psychotic symptoms.<sup>[6]</sup>

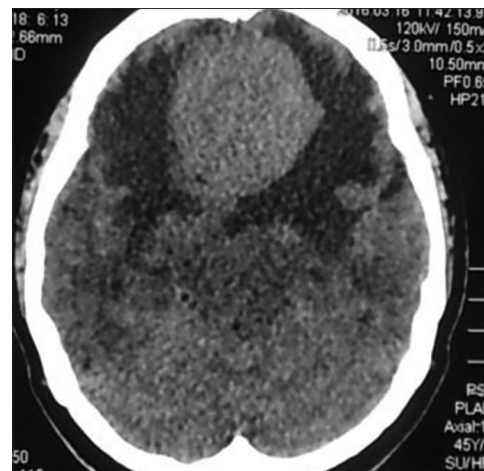
Some studies have claimed that the symptoms could be unrelated to the site involved, and the relationship with some psychiatry symptoms has been much disputed.<sup>[7-9]</sup> However, Lampl *et al.* and Bommakanti *et al.* affirmed a significant correlation between psychiatric symptoms and the site of the lesions.<sup>[4,10]</sup> Depression mainly present in frontal convexity meningioma. Basifrontal and sphenoid wing meningiomas present predominantly with mania or depression; and suprasellar lesions and temporal convexity meningiomas mostly present with delusional disorders.<sup>[4]</sup>

It is suggested that, when a middle-aged person with no past history of a psychiatric disorder develops a slowly progressive psychological change and does not respond well to treatment, or the symptoms do not match with any ICD-10 criteria, a brain tumor, particularly meningioma, should be suspected. Primary care doctors, as gatekeepers, should evaluate the history and revise the diagnosis in every visit, especially if the symptoms do not improve. Those presenting with a late onset of psychiatric symptoms or having atypical and neurological symptoms should undergo detailed physical and neurological examinations.<sup>[11]</sup> However, headache, papilledema, and focal neurological signs may develop only when a tumor has reached an advanced stage.

CECT of the brain is mandatory when a brain tumor is under consideration. This patient underwent CECT, and the result confirmed frontal meningioma. Further referral to neurosurgery is obligatory, as surgery has a promising role in reverting the



**Figure 1:** Contrast-enhanced computed tomography brain shows well-defined markedly enhancing lesion in the frontal region cause mass effect to the adjacent brain parenchyma with associated marked surrounding edema



**Figure 2:** Contrast-enhanced computed tomography brain

psychiatric manifestations. The site of the lesion and the nature and period of the psychiatric problems significantly affect the postoperative outcome. Frontal convexity meningioma presenting with the depressive illness have the best prognosis, and the symptoms usually decrease by the 3<sup>rd</sup> month postresection.<sup>[4]</sup> Early diagnosis is very important, although meningioma is usually benign and often curable. A delay in diagnosis may lead to prolonged disappointment for the patient's family as his or her personality changes worsen.<sup>[11]</sup>

The patient presented initially with depressive symptoms but later developed some atypical symptoms that could not be explained by any psychiatric diagnosis. These features called for further investigations to rule out organic diseases. This is an example of a reversible clinical case that warrants early detection among the front liners and later requires a multi-discipline management plan.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

### Conflicts of interest

There are no conflicts of interest.

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